DOCUMENT RESUME

ED 436 033 EC 305 917

TITLE	Gifted Education: A Resource Guide for Teachers.
INSTITUTION	British Columbia Dept. of Education, Victoria.
REPORT NO	RB-0050
PUB DATE	1995-00-00
NOTE	59p.
AVAILABLE FROM	For full text: <http://www.educ.gov.bc.ca/specialed/gifted/ack.html>.
PUB TYPE	Guides - Non-Classroom (055) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Acceleration (Education); Classroom Environment; *Classroom Techniques; Curriculum Design; *Curriculum Enrichment; Educational Strategies; Elementary Secondary Education; Enrichment Activities; Foreign Countries; *Gifted; Inclusive Schools; *Student Characteristics; *Student Needs; Talent Identification; *Teaching Methods
IDENTIFIERS	British Columbia

ABSTRACT

Designed for teachers, this resource guide on gifted education discusses the identification of gifted students and different types of educational strategies that teachers can use with gifted students. Topics include: (1) providing gifted students with the most enabling learning environment possible; (2) identifying and defining characteristics of gifted students; (3) developing a student profile to help provide a deeper understanding of an individual's unique interests, styles, and abilities; (4) establishing principles of a differential curriculum for the gifted/talented; (5) developing approaches that can be used to meet the needs of the gifted learner in the regular classroom, such as changes in the content of the curriculum, the processes that engage the students, the products of their studies, and the learning environment; (7) identifying specific content changes that can be used, including acceleration, telescoping, compacting, independent study, tiered assignments, and learning centers; and (8) developing different curricular models for gifted students, including learning through broad based themes, learning through case studies, and learning through problem solving. Throughout the text, additional recommended reading material is provided. Appendices include a list of programming options, a teacher planning guide, forms for individual education plans, and evaluation forms for gifted behaviors and class assessment. (Contains 77 references.) (CR)

Reproductions supplied by EDRS are the best that can be made
from the original document.

RB 0050

ED 436 033

Gifted Education

A Resource Guide for Teachers

K. Forshaw

U.S. DEPARTMENT OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

EC 305917

Province of British Columbia

Ministry of Education

BEST COPY AVAILABLE

Acknowledgments

The Special Education Branch of the Ministry of Education gratefully acknowledges the following people for their contributions to the planning and revision of this teachers' resource guide:

Keith Beale, School District 37 (Delta)
Sandy Brun, St. George's School
Gabriela Caljouw, School District 65 (Cowichan)
John Caldwell, School District 65 (Cowichan)
Lynn Chartres, School District 45 (West Vancouver)
Patricia Clough, School District 89 (Shuswap)
Mary Dickens, School District 65 (Cowichan)
Melodie Dupuis, School District 65 (Cowichan)
Dr. John Feldhusen, Purdue University
Helene Giroux, Choice Learning Centre, Richmond
Sue Hull, School District 36 (Surrey)
Cheryl Jennings, School District 22 (Vernon)
Trish Joly, School District 68 (Nanaimo)
Linda Joyce, School District 65 (Cowichan)
Dr. Lannie Kanevsky, Simon Fraser University
Maureen Kornitsky, School District 40 (New Westminster)
Mary Lau, School District 65 (Cowichan)
Maureen McDermid, School District 38 (Richmond)
Dr. Marion Porath, University of British Columbia
Carolyn Prellwitz, School District 65 (Cowichan)
Anna Price, School District 37 (Delta)
Dawn Reithaug, School District 41 (Burnaby)
Michael Ryan, School Distric 63 (Saanich)
Shirle Schweers, School District 43 (Coquitlam)
Rita Szabo, School District 65 (Cowichan)
Daria Trischuk School District 39 (Vancouver)
Dr. Don Treffinger, Center for Creative Learning
Lenore Underhill, School District 65 (Cowichan)
Charlene Watts, School District 54 (Bulkley Valley)
Sandra Webster Worthy, School District 62 (Sooke)

In addition the Ministry gratefully acknowledges the contributions of School District 65 (Cowichan), and in particular Diane Austin, for researching and developing this document, and Alberta Education for collaborating in concept development.

Contents

Programming for Gifted Students 5
Who Are Our Gifted Students? 6
Identifying Gifted Students 11
Developing a Student Profile 12
Gifted Learners in the Classroom 14
Strategies 16

Content
- Acceleration 17
- Telescoping 17
- Compacting 18
- Independent Study 19
- Tiered Assignments 19
- Learning Centres 20
- Curricular Models 20

Process
- Higher Level Thinking 23
- Creative Thinking 25
- Problem Solving 26
- Developing Research Skills 29

Products
- Representing Knowledge 31
- Reaching the Audience 31

The Learning Environment
- Physical, Social, Emotional 32
- Study of Famous People 32
- Bibliotherapy 33
- Grouping for Instruction 33

You Can't Do It Alone 34
References 36

Appendices
- Appendix 1: Programming Options 44
- Appendix 2: Teacher Planning Guide 45
- Appendix 3: Individual Education Plan (forms and samples) 47
- Appendix 4: Brilliant Behaviours 51
- Appendix 5: Class Assessment 52

Additional Readings 54
Glossary of Terms 57

BEST COPY AVAILABLE

Programming for Gifted Students

Developing and maintaining meaningful programs for exceptionally talented and gifted students is one of the most intriguing challenges we face as teachers. Part of what makes our job easier or more difficult, frustrating or satisfying, is the match we achieve between the expectations of the system and what we, as practitioners, can realistically do.

The Ministry of Education's mission statement promotes an education system which enables "all learners to develop their individual potential." For gifted students this requires opportunities to develop in ways which may far exceed expected learning outcomes for their age.

All students are entitled to equal access to learning and achievement. We provide this access by placing exceptional students in the most enabling learning environment possible. We must consider this same principle when programming for gifted students.

In what ways do our decisions for our gifted students ensure that they are in the most enabling environment?

This is an interesting time to be teaching gifted students. New initiatives are giving educators greater freedom to individualize programs and make the learning environment dynamic and relevant. Among the initiatives that have positive implications for gifted and talented students are:

- personal planning at all levels,
- work experience and career development at the graduation level,
- increased use of computer technology,
- opportunities to challenge courses at the graduation level, and
- opportunities to take independent-directed studies.

BEST COPY AVAILABLE

5

Who Are Our Gifted Students?

Perceptions of giftedness vary even among gifted education specialists. At one time "gifted" was the term used to describe those students who learned quickly and obtained high scores on IQ tests. While these abilities still contribute to our understanding of giftedness, the findings of many researchers have given us a deeper understanding of intelligence.

Today "giftedness" is generally accepted to include a wide range of attributes, from the traditional intellectual measures to interpersonal abilities.

Howard Gardner and Joe Renzulli are among the researchers who have had considerable impact in recent years on our understanding of giftedness. Gardner's theory of multiple intelligences and Renzulli's three-ring conception of giftedness are useful starting places for classroom teachers attempting to identify gifted behaviour among their students.

Michael

Michael is nine years old. His performance on academic tasks that require verbal ability is considerably above average, but his grades in math are in the average to low average range. Recently when two psychology majors from a nearby university were observing Michael in class, they discovered that he had two imaginary people do his math — Mr. X and Mr. Y. Mr. X did the work in the traditional way while Mr. Y tried different approaches to answering the questions. The teacher reports that she has only seen the work of Mr. X who frequently has incorrect answers although an analysis of errors reveals that errors are due to minor mistakes in computation. Is Michael gifted?

The Theory of Multiple Intelligences (Gardner, 1983)

Gardner's model of intelligence describes capabilities in seven areas. The following summary of these capabilities is drawn from Thomas Armstrong (1994):

- Linguistic: The ability to use words effectively both orally and in writing (e.g., writer, orator).
- Logical-Mathematical: The ability to use numbers effectively and to see logical relationships and patterns (e.g., mathematician, scientist, computer programmer).
- Spatial: The ability to visualize and to orient oneself in the world (e.g., guide, hunter, architect, artist).
- Bodily, Kinesthetic: The ability to use one's body to express ideas; to make things with hands; and to develop physical skills (e.g., actor, craftsperson, athlete).
- Musical: The capacity to perceive, discriminate, transform and express musical forms (e.g., composer, musician).
- Interpersonal Intelligence: The ability to perceive and make distinctions in the moods, intentions, motivations and feelings of other people (e.g., counsellor, political leader).
- Intrapersonal Intelligence: Self-knowledge and the ability to act adaptively on the basis of that knowledge (e.g., psychotherapist, religious leader).

6

BEST COPY AVAILABLE

Historically, gifted students have been identified by excellence in linguistic or logical-mathematical realms. Students with outstanding abilities in other areas may not have been identified for gifted programming. A broader search for giftedness and a commitment to its development includes all of the intelligences.

According to Gardner, performance within each of the intelligences is developmental. Development may or may not occur at the same rate for all of the intelligences. Gifted students will show patterns of development that exceed their peers in one or several of the intelligences.

The Three-Ring Conception of Giftedness (Renzulli, 1986)

After an extensive analysis of research studies of gifted individuals, Renzulli concluded that giftedness involves the interaction of three sets of characteristics: above average intellectual ability, creativity and task commitment. This interaction may result in giftedness in general performance areas such as mathematics, philosophy, religion or visual arts, or in performance areas as specific as cartooning, map-making, play-writing, advertising or agricultural research.

Treffinger (1986, p. 40) defined the characteristics as follows:

Above Average Intelligence

- Advanced vocabulary
- Good memory
- Learns very quickly and easily
- Large fund of information
- Generalizes skilfully
- Comprehends new ideas readily
- Makes abstractions easily
- Perceives similarities, differences, relationships
- Makes judgments and decisions

Chris

Chris is a quiet 12 year old who, in spite of poor spelling and handwriting, produces average to above average work in class. He seldom speaks in class although once in a while he offers a unique point of view during discussions in social studies and science. Recently his class took the SRA Diagnostic Reading and Math tests. Although the tests are designed to identify students with difficulties and do not test the upper limits of a student's functioning, Chris surprised his teacher because he made no mistakes on either of the tests. Is Chris gifted?

Classroom Resources

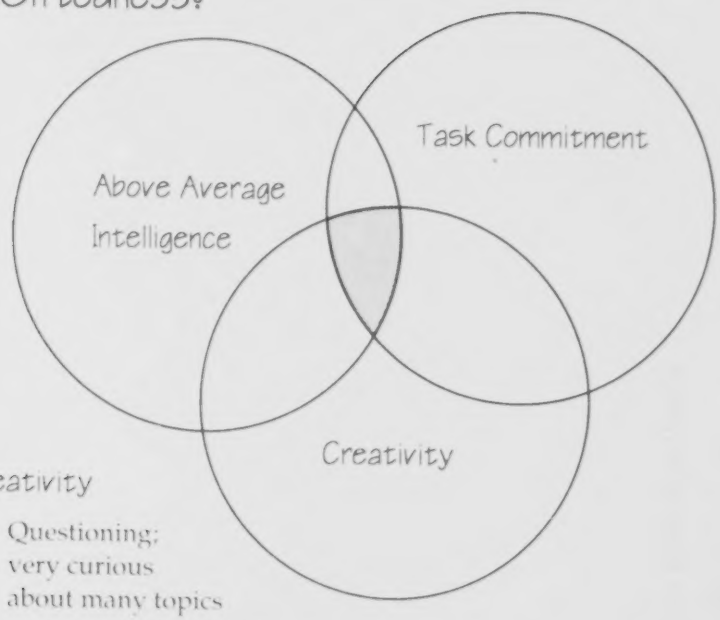
Seven Ways of Knowing: Teaching for Multiple Intelligences (Lazear, 1991)

Seven Ways of Teaching: The Artistry of Teaching with Multiple Intelligences (Lazear, 1991)

BEST COPY AVAILABLE

7

What Makes Giftedness?



Creativity

- Questioning; very curious about many topics
- Has many ideas (fluent)
- Sees things in varied ways (flexible)
- Offers unique or unusual ideas (original)
- Adds details; makes ideas more interesting (elaborates)
- Transforms or combines ideas
- Sees implications or consequences easily
- Risk-taker; speculates
- Feels free to disagree
- Finds subtle humour, paradox or discrepancies

Task Commitment

- Sets own goals, standards
- Intense involvement in preferred problems and tasks
- Enthusiastic about interests and activities
- Needs little external motivation when pursuing tasks
- Prefers to concentrate on own interests and projects
- High level of energy
- Perseveres; does not give up easily when working
- Completes, shares products
- Eager for new projects and challenges
- Assumes responsibility

Amy

Fifteen year old Amy is a competent, hard working student who takes home report cards with mostly A's and the occasional B. She grasps concepts easily, completes all of her work on time, and makes an effort to produce outstanding reports with information from many different sources. She generally makes top marks on exams and is extremely upset if she doesn't. Is Amy gifted?

BEST COPY AVAILABLE

8

Renzulli's three ring concept of giftedness has helped educators to look for more than intellectual ability in identifying students with potential. We now recognize the importance of creativity. When these two factors are combined with task commitment, there is potential for giftedness.

Task commitment refers to the passion and the perseverance that follows when students are involved in problems, topics and projects of their own interest or choosing, in or outside of the classroom. Gifted students are typically committed to tasks that are personally meaningful. A lack of commitment to a task assigned by someone else does not necessarily mean the student lacks task commitment. For example, failing to complete classroom assignments is not an appropriate reason to exclude a student from gifted programming. Therefore, educators using task commitment as an indicator of giftedness should do so carefully.

Renzulli (1986), Treffinger (1986) and Feldhusen (1992) suggest that one goal of education is to identify the exceptional strengths, talents and interests of students and to develop programming to help them optimize their potentials. The intent is to develop programming which reflects a student's uniqueness. Areas within school programs that provide opportunities for talent identification and development are shown in the Feldhusen graphic (1992, p. 14) on page 10.

Gardner's and Renzulli's work illuminates the need to identify student potential in a variety of ways and to develop multiple programming options to meet each student's unique needs.

The Challenge

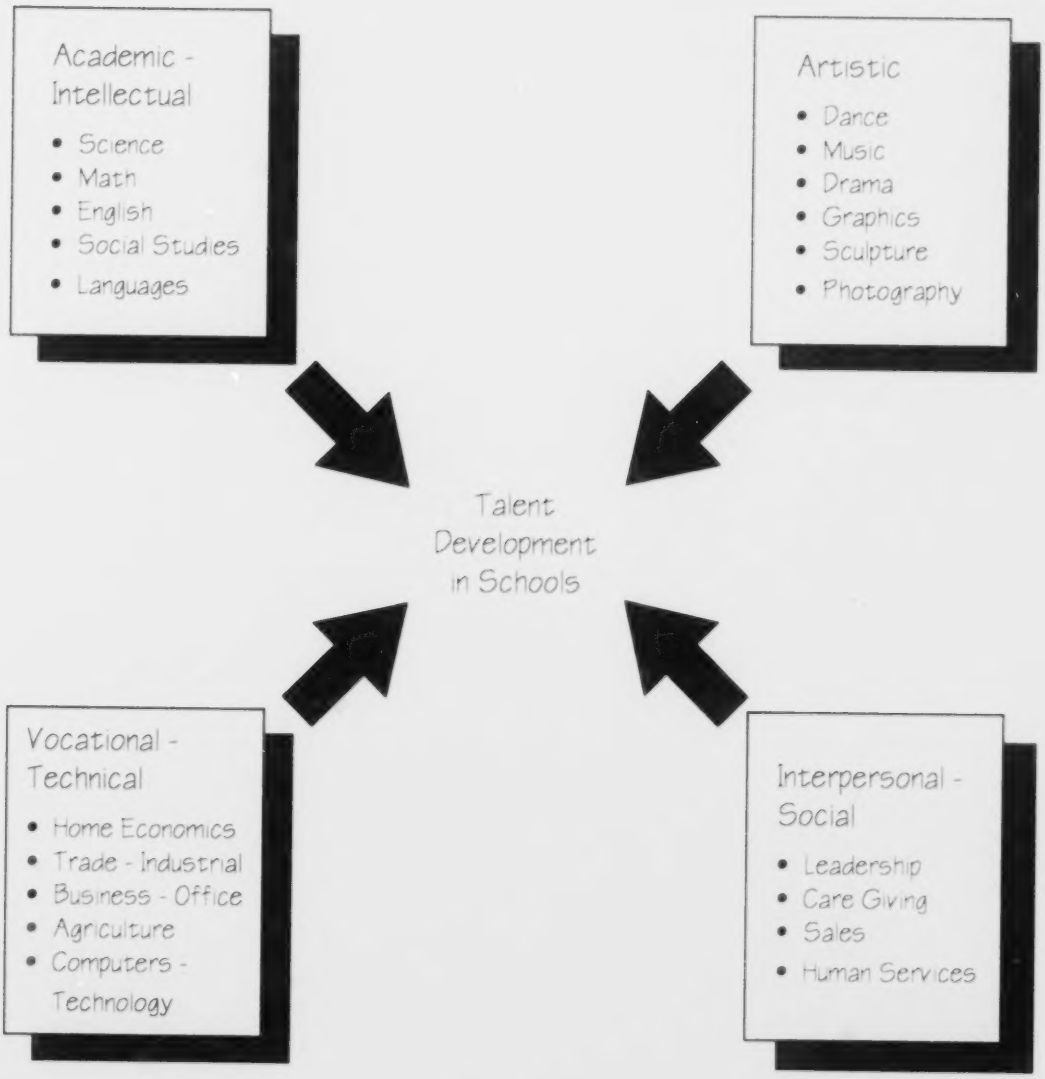
Is Michael gifted?

What about Chris and Amy?

More information is needed to answer these questions. Developing detailed student profiles for potentially gifted students is an important first step toward appropriate programming. The ongoing development of student profiles makes it possible to design programming based on the student's strengths and talents.

9

Areas for Talent Identification



Identifying Gifted Students

How can a teacher determine if a child is gifted? When establishing an identification procedure, teachers and administrators must be sensitive to factors which may inhibit student identification:

- language,
- culture,
- gender,
- physical ability,
- learning or sensory disabilities, and
- personality style.

Some students jump out as highly exceptional and capable learners. They catch our attention with exceptional responses to classroom activities. Others may provide a mixed picture, demonstrating strenghths in some areas, but average or below average functioning in others. The question is not **whether** to enhance the program for these students, but **how** to enhance the program.

Some students have exceptional potential that is masked by individual characteristics or underachievement. Exceptional potential can be missed when the learning environment does not offer the student an opportunity to demonstrate or develop a talent. Establishing a systematic process of identification will ensure that most, if not all, gifted students are identified.

Identification of strengths and talents should be ongoing and should involve using multiple criteria. Several of the following sources of information should be used as part of the identification process:

- Formal test results including indicators of cognitive ability, achievement, aptitude and creativity.
- Teacher observations including anecdotal records, checklists and inventories.
- Records of student achievement including assignments, porttolios, grades and outstanding talents and accomplishments.

In addition, the following may contribute to a deeper understanding of individual student strengths:

- Nominations by educators, parents, peers and self.
- Interviews of parents and students.

11

Developing a Student Profile

Developing a student profile helps to provide a deeper understanding of an individual's unique interests, styles and abilities. By gathering information from a variety of sources, teachers and school-based teams are in a better position to make educational decisions that will enhance the student's development.

Means of gathering data include: observations of student performance; assessment of student products, portfolios, journals and learning logs; informal and formal classroom testing; learning style inventories; interest inventories; rating scales of student characteristics; previous report cards; information from parents; and psycho-educational testing.

Five areas to consider are the student's:

- academic achievement,
- learning styles and strengths,
- interests,
- special abilities, and
- visions and goals for the future.

Appendix 3: IEP - Student Profile

Appendix 4: Brilliant Behaviours

Academic achievement tells us what the student can do in various areas of the curriculum. Watching a student during learning activities, analyzing student products, and using learning inventories are a few ways to gather information. In addition to academic achievement, tests that have a ceiling many years beyond the student's age level can provide information about the student's maximum level of performance. This information is valuable when selecting learning activities, materials and environments that can provide a challenge.

Learning styles and strengths refer to the way a student approaches learning. The concept of learning styles is approached by different authors from different perspectives.

Renzulli and Smith's (1978) *Learning Styles Inventory* measures student attitudes toward nine general modes of instruction: projects, drill and recitation, peer teaching, discussion, teaching games, independent study, programmed instruction, lecture and simulation.

Silver and Hanson (1980) base their learning style inventory on the Myers-Briggs personality type indicators. Gardner's multiple intelligences theory describes seven different areas in which a student might show learning strengths.

BEST COPY AVAILABLE

Brilliant Behaviours (Kanevsky, Maker, Nielsen & Rogers, 1994) is a checklist that describes twelve characteristics associated with giftedness. This checklist is intended to help teachers make systematic observations that can lead to assessment and identification of gifted students. Maker and Nielsen (in press) have included this checklist and suggested applications for its use in *Principles and Curriculum Development for the Gifted*. The checklist itself is included in an appendix in this resource guide.

Interests of the students can provide a basis for curriculum development, extension exercises and independent studies. While teachers have many ways to find out about student interests, there are some published inventories that can be helpful. One is *My Book of Things and Stuff* (McGreevy, 1982) written for primary and intermediate students. Another is *The Interest-A-Lyzer* (Renzulli, 1977) appropriate for middle and secondary school students.

Special abilities refers to the student's talents that may or may not be exhibited through the school's curriculum. The student may have a special ability in taking mechanical objects apart and putting them back together or may be an accomplished pianist, figure skater or hockey player. Special abilities can often be identified through knowledge of the student's hobbies, extracurricular activities and outside interests.

Vision and goals for the future are the student's personal values and hopes for the future. This includes the student's desired lifestyle, possible careers and community interests set in the context of a long term vision. Creating a vision or desired future provides the student with a focus for personal planning.

Nine Learning Preferences...

- Projects
- Drill and recitation
- Peer teaching
- Discussion
- Teaching games
- Independent study
- Programmed instruction
- Lecture
- Simulation

BEST COPY AVAILABLE

Classroom Resources

My Book of Things and Stuff: An Interest Questionnaire for Young Children (McGreevy, 1982)

The Interest-A-Lyzer (Renzulli, 1977)

13

Gifted Learners in the Classroom

"It's not an age difference, but an attitude difference, that's important here."

University Hill

The student profile is used to create a program to meet the student's unique learning needs. What each student needs in a program will vary.

Thirty-three academically gifted students at Vancouver's University Hill Secondary School were asked: "If we as teachers could provide the very best learning situation for you, what would you have us do?" While responses varied, the major concern was with recognition of an accelerated learning rate. Secondary concerns centred around learning styles. Responses included:

- Let me go ahead and work at higher levels.
- Let us work with older kids. We can fit in.
- It's not an age difference but an attitude difference that's important here. Older kids are more accepting.
- Give us independent programs. Let us work ahead on our own.
- Know that everyone has talent — and need. Provide challenge (in our talent area).
- Have totally hands on lessons. If we're studying elections, have a mock election.
- Use more videos, films and telecommunications.
- Use humour.
- Provide independent study opportunities — let us study something we are interested in.

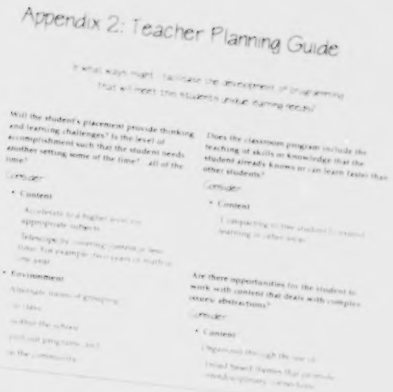
These student responses are consistent with strategies promoted by educators and curriculum developers in gifted education. All agree that gifted students need a learning environment that provides opportunities for challenge, opportunities to work with intellectual peers, encouragement to become independent learners, and curriculum enrichment.

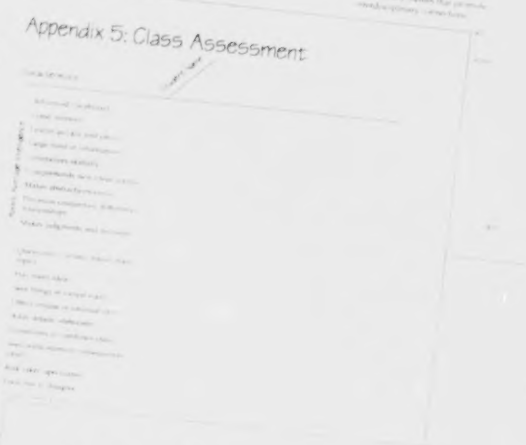
BEST COPY AVAILABLE

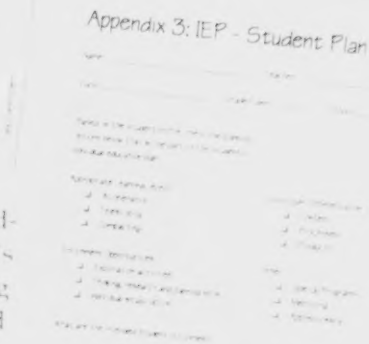
14

The following principles of a differentiated curriculum for the gifted/talented were set out by Kaplan (1986, p.183). This is a useful starting point for the classroom teacher who is looking for ways to enhance the curriculum for a gifted student.

- Present content that is related to broad-based issues, themes or problems.
- Integrate multiple disciplines into the area of study.
- Present comprehensive, related and mutually reinforcing experiences within an area of study.
- Allow for the in-depth learning of a self-selected topic within the area of study.
- Develop independent or self-directed study skills.
- Develop productive, complex, abstract and/or higher level thinking skills.
- Focus on open-ended tasks.
- Develop research skills and methods.
- Integrate basic skills and higher level thinking skills into the curriculum.
- Encourage the development of products that challenge existing ideas and produce "new" ideas.
- Encourage the development of products that use techniques, materials and forms.
- Encourage the development of self-understanding. For example, recognizing and using one's abilities, becoming self-directed, appreciating likenesses and differences between oneself and others.
- Evaluate student outcomes by using appropriate and specific criteria through self-appraisal, criterion-referenced and/or standardized instruments.


Appendix 2: Teacher Planning Guide


Appendix 5: Class Assessment


Appendix 3: IEP - Student Plan

BEST COPY AVAILABLE

15

Strategies

Appendix 1: Programming Options

A variety of approaches can be used to meet the needs of the gifted learner in the regular classroom. In developing the curriculum the teacher can consider making changes in four areas:

- The content of the curriculum. (What the student studies.)
- The processes that engage the students. (How the student works with information.)
- The products of their studies. (How students represent what they know.)
- The learning environment.

The following strategies for working with students are grouped under these headings. In some instances a particular strategy could be placed under more than one heading. In the interest of space each strategy will be described only once.

Content

The content of the curriculum consists of the facts, concepts, issues, problems and themes that students study in their pursuit of knowledge. In general gifted learners absorb material at a faster pace, work well with abstractions, make learning connections easily and often have interests more like older students. As a result they will need to work at higher instructional levels, at a faster pace and with a variety of materials.

Strategies for providing content at an appropriate learning level are:

- acceleration,
- telescoping,
- compacting,
- independent study,
- tiered assignments, and
- learning centres.

In addition, there are a number of curricular models that can be used to enhance content.

BEST COPY AVAILABLE

Acceleration

Acceleration is the practice of placing students at a higher than normal level of instruction to meet their learning needs. It occurs when a classroom teacher provides the student with advanced curriculum, when a student skips a grade, or when a student takes a specific course at a higher level.

Students can be accelerated by grade, when they are advanced in all areas, or by subject. In the latter case a student in Grade 6 may be doing math at an advanced level and language arts at his age level.

While many educators resist acceleration as a strategy, research overwhelmingly supports it. Acceleration has been shown to be positive for both achieving and underachieving gifted learners in the majority of documented cases. (Benbow & Stanley, 1983; Kulik & Kulik, 1992).

Telescoping

Telescoping is reducing the amount of time a student takes to cover the curriculum. Courses often involve overlapping content and skills from one grade level to the next. Gifted learners may not need as much time to learn and remember the material. An example of telescoping is when a student completes grades 8 and 9 math in one year. Telescoping can be used in conjunction with acceleration. For example, at Johns Hopkins University, mathematically precocious youth are offered both strategies to help them advance more quickly. The student's learning needs are diagnosed and instruction is provided only when needed. This allows the student to move on to more demanding work (Benbow, 1986).

The early university entrance pilot project housed at University Hill Secondary School in Vancouver is another example of telescoping. In this program highly gifted students, who range in age from 11 to 15, spend one year finding and working at levels that provide academic challenge. In the second year they learn skills needed for early entrance to university.

Acceleration programming options...

- Continuous progress
- Grade skipping
- Content acceleration
- Testing out of course requirements
- Advanced courses in summer or after school
- Correspondence courses,
- Specially designed credit courses
- Advanced placement courses
- Dual enrolment
- Early graduation
- Early enrolment in college
- Radical acceleration

BEST COPY AVAILABLE

17

Compacting

Compacting is a strategy designed to streamline the amount of time the student spends on the regular curriculum. This strategy allows students to demonstrate what they know, to do assignments in those areas where work is needed, and then to be freed to work on other curricular areas.

Renzulli and Reis (1985) use compacting to reduce repetition and to "buy" time for the students to work on an individual project of their own choice.

...the student will spend less time on regular classroom assignments and have more time to work on applications...

It may also be used to extend work in a given topic. For example if the area to be compacted is math, the student will spend less time on regular classroom assignments and have more time to work on applications or math enrichment activities.

To compact curriculum the teacher needs to:

- Decide what the student needs to know in the area being considered for compacting.
- Find out what the student knows — by testing, observing, analyzing performances.
- Provide assignments so the student can master unknown material.
- Work with the student in developing an individual learning plan that may include:

  - enrichment in the compacted area.

  - enrichment in an area of interest.

  - an individual study project.

The process of compacting can be used to develop an Individual Education Plan (IEP) for students. A thorough presentation of compacting with lists of resources and places to obtain them is presented in Reis, Burns, Renzulli (1992.)

Classroom Resources

Curriculum Compacting: The Complete Guide to Modifying the Regular Curriculum for High Ability Students (Reis, Burns, & Renzulli, 1992)

It's About Time: Inservice Strategies for Curriculum Compacting (Starko, 1986)

Teaching Gifted Kids in the Regular Classroom (Winebrenner, 1992)

BEST COPY AVAILABLE

Independent Study

Independent study is an opportunity for students to pursue areas of personal interest or to individually investigate course topics. Components of an independent study program include:

- identifying and developing a focus,
- developing skills in creative and critical thinking,
- using problem solving and decision making strategies,
- learning research skills,
- developing project management strategies,
- keeping learning logs,
- evaluating the process and product,
- sharing the product with an intended audience from beyond the classroom, and
- keeping a portfolio of results.

Independent studies help the student move from being teacher-directed to student-directed. With teacher support and coaching the student learns how to decide on a focus, how to develop a plan of action and follow it through, and how to monitor the process. Students take part in developing criteria for evaluation and begin to work with the teacher as a partner.

There are many excellent materials available to help teachers with this process. Among these are: Gibbons (1991), Norman (1989), Reis, Burns and Renzulli (1992), and Treffinger and McEwen (1989).

Tiered Assignments

Tiered assignments are designed to meet the needs of a group of learners functioning at a range of levels. Students work on the same content, but are asked different questions and are provided with different activities which are assigned according to ability.

Some teachers involve students in the process of designing units of work. By teaching the students Bloom's taxonomy and creative thinking stems, students can write and design questions and activities for different levels of thinking. The teacher works with the students in deciding which questions and activities they will be responsible for completing and in setting evaluation criteria (Treffinger, Hohn & Feldhusen, 1989).

Something to think about...

In what ways is optimizing the learning of a gifted student like:

- Training for the Olympics
- Exploring outer space
- Organizing an expedition
- Developing a business
- Scuba diving
- Swimming with dolphins
- Writing a novel
- Painting a mural
- A Sunday afternoon
- Blowing glass
- Composing a symphony
- Balancing a budget

Classroom Resources

Fostering Independent Creative Learning: Applying Creative Problem Solving to Independent Learning (Treffinger & McEwen, 1989)

How to Become an Expert: Discover, Research and Build a Project in Your Chosen Field (Gibbons, 1991)

Pathways: A Personal Project Management System (Gibbons, 1991)

The Self-directed Learning Contract: A Guide for Learners and Teachers (Norman, 1989)

Reach Each You Teach II: A Handbook for Teachers. (Treffinger, Hohn & Feldhusen, 1989)

19

BEST COPY AVAILABLE

Gifted teaching... Gifted performance

When I casually asked Sharon Friesen how she and her teaching partner Pat Clifford taught their multi-grade primary class through broad based themes, I was in for a surprise. For one year all of their classroom curriculum was woven around the theme "structures." The big question that they presented students was "What holds things together?" and related to it, "What causes things to fall apart?"

She explained that everything the students studied was organized through the lens of these two interrelated questions. For example, students might ask what holds friendships, families, communities, countries, economies together? What causes them to fall apart? They might ask what holds plants, animals, or ecological systems together? What causes them to fall apart?

They explored patterns in math and studied structures in literature. As well, all students had an opportunity to study and experiment with building structures as part of a study of robotics.

continued

Learning Centres

Learning centres are physical "stations" where students are engaged in activities designed to extend their understanding and thinking about a topic. Activities may include working on an individual or small group investigation, watching a video tape, listening to an audio tape or working on a computer activity. Sometimes there are games to reinforce a concept or problems to solve.

Learning centres can be used to reinforce and extend the regular program or to identify and extend the interests of students. In the latter case, they may not be directly related to curricular content, but introduce the students to new possibilities for study.

For the teacher, learning centres provide a way to work with small groups while the rest of the class is engaged in other assignments or centre work.

Curricular Models

Learning Through Broad Based Themes

Kaplan (1986) uses broad based themes as a curriculum organizer. A theme can span several disciplines and give rise to the study of many topics. The content of the curriculum, the thinking and research skills used, and the end product of the investigation are taken into consideration in the development of the theme and related lessons. Examples of broad based themes are: change, cycles, structures and systems. Students at any level can take part in lessons developed around any theme. The work will vary in levels of sophistication.

Teachers Sharon Friesen and Pat Clifford used the theme "structures" with a multi-grade primary class in Calgary in 1993/94. (Clifford & Friesen, 1993). Throughout the year, all lessons were woven around this theme. Students were presented with two questions:

- What holds things together?
- What causes things to fall apart?

Everything the students studied was viewed through the lens of these two interrelated questions. For example, the questions were used to study friendships, families, communities, countries and economies. The same questions were used to examine plants, animals and ecological systems.

20

Students explored patterns in math and studied structures in literature. As part of a study of robotics, all students had an opportunity to experiment with building structures.

Although the two teachers established intended learning outcomes for the year, they did not decide on the precise content materials they would use. Instead, content emerged from the questions, interests and concerns of their students as they related to the topic of study. These lead to a variety of independent and group investigations. A final, important component of the program was the expectation of students to present the outcomes of their studies to parents and the community.

The design of this program follows a model often recommended for gifted students. Friesen and Clifford found, at the end of three years, that student's with average ability were functioning several years above grade placement. (Clifford & Friesen, 1994. Unpublished raw data.)

Information for developing multi-disciplinary themes can be found in Drake (1993), Jacobs (1989), Gamberg, R., Kwak, W., Hutchings, M., and Altheim, J. (1988) and Kaplan, (1986).

Learning Through Cases

In case study teaching students are presented with a realistic scenario that is woven around a dilemma. Students read the case and then work together in study groups to discuss questions about the case. After they have formulated some ideas about the issues, the teacher holds a class discussion. Through carefully designed questions, the teacher helps clarify and extend the thinking of students by drawing out what they know in a non-judgmental way. Students are encouraged to question aspects of the case they may not have considered. Often students find that, as a result of the group discussion, there are other things they will need to know before they can reach conclusions or make decisions about the issues presented in the case. This **need to know more** leads to follow up activities.

Cases require the student to think critically and to make sound decisions. To make an informed decision the student needs to know and to understand the facts of the situation, study it from different points of view and, ultimately, to think about the consequences of their opinions and decisions. Teaching with cases is a methodology used in many business, medical and law schools. Wassermann (1993, 1994) provides numerous examples of cases in her presentation of this methodology.

I was curious how they organized the program. She explained that while she and Pat had established the intended learning outcomes for the year, they did not know at the beginning precisely what content materials they would use. Content emerged from the students' questions, interests and concerns as they related to the topic of study. These lead to a variety of independent and group investigations.

Not only did students working on a variety of investigations, but built into the program was the expectation that they would present their project outcomes to parents and the community. As I listened I was intrigued by the fact that the design of the program was very much like that recommended for gifted learners. More fascinating was that at the end of three years of working with this class, the average reading score on the Alberta Diagnostic Achievement Test for these Grade 3 students was at a Grade 6 level. (Clifford & Friesen, 1994)

Classroom Resources

Individualized Teaching of Gifted Children in Regular Classrooms (Feldhusen, 1990)

Serious Players in the Primary Classroom: Empowering Children Through Active Learning Experiences (Wassermann, 1990)

BEST COPY AVAILABLE

A Case Study...

As I enter Maureen Adam's Grade 7 classroom in Maple Ridge, the students are absorbed in an article that reveals the wonders of taxol, a rare, experimental agent from yew bark that has a positive effect in reducing cancerous tumours.

When students finish reading, they discuss study questions in small groups to prepare for a whole class discussion. Their teacher begins the discussion by inviting students to tell what they believe are the main issues in the case. What at first appears to be a promising solution for cancer victims turns out to be a multifaceted problem:

- There is a potential supply problem. It takes 5-6 yew trees to yield one gram of taxol.
- Yew trees are rare and slow growing.
- Taxpayers have lent $3,575,000 to Towers Phytochemicals Ltd. to build a plant to begin testing and producing taxol.

A case study opens the door to a variety of follow-up activities designed to engage students in challenging activities that extend their interest in and understanding of a problem.

Learning Through Problem Solving

Developing the curriculum through the study of problems is related to case method teaching. Both begin with a scenario that presents a multifaceted problem. In problem solving not only do students critically analyze the problem from different points of view, but they must also decide upon a solution, develop a plan of action for its implementation and, in some instances, carry out the plan of action. See Treffinger, Isaksen and Dorval (1994).

School and community problems, environmental issues, political issues and global issues are sources of real problems to study. For teachers new to this process, the Future Problem Solving Program is a way to get started. Each year the Future Problem Solving Program presents problems for students to address such as hazardous waste disposal, overpopulation and shrinking rainforests. The topics are written as scenarios taking place in the future. Students must look at the problem from many points of view, decide on the critical sub-problems, choose one to work on and formulate a plan of action for dealing with it. Curriculum support materials are provided with this program.

For inventive students interested in technology or drama, the Odyssey of the Mind Program presents challenging problems for students to solve. Problems include developing structures that hold up under pressure, designing vehicles with limited sources of power and developing a dramatization that depicts a transformation. Curriculum support materials are available for science, math, social studies and English.

22

Process

To design curriculum that meets the learning needs of gifted students we must consider not only what is being studied, but the processes that engage students.

Process skills include:

- higher level thinking,
- creative thinking,
- problem solving, and
- research skills.

> The formulation of a problem is often more important than its solution, which may be merely a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle, requires imagination and marks real advance in science.

Higher Level Thinking (Bloom, 1956)

Bloom's Taxonomy is a model frequently used as a guide when designing themes, units, lessons and assignments that promote higher level thinking. The taxonomy provides a way to understand levels of thinking. Bloom proposes that at the most basic level we acquire knowledge and comprehension. At higher levels we learn how to apply principles and to analyze, synthesize and evaluate.

Many teachers developing curriculum for gifted students use Bloom's taxonomy to design questions that promote higher level thinking. Assuming that a student has no background in a topic of investigation, the student would move from knowledge and comprehension to application before working with the higher order skills of analysis, synthesis, and evaluation. The latter three levels are associated with critical thinking.

Bloom's Taxonomy of Educational Objectives

Basic Levels

Knowledge refers to the memory of facts and information.

Examples:

- List Canada's provinces.
- Match each province with the correct capital.
- Label the parts of the brain.

Cue verbs to use in questioning: list, match, write, tell, recite, memorize, find, identify, label, choose, pick.

Classrcom Resources

Teaching Elementary Science: Who's Afraid of Spiders (Wassermann & Ivany, 1988)

Planning Integrated Curriculum: The Call to Adventure (Drake, 1993)

Gate: Curriculum Framework 1991 1996 (Smith, 1991)

The Grid: A Model to Construct Differentiated Curriculum for the Gifted (Kaplan, 1986)

Interdisciplinary Curriculum: Design and Implementation (Jacobs, 1989)

Learning and Loving It: Theme Studies in the Classroom (Gamberg, et al., 1988)

Introduction to Case Method Teaching: A Guide to the Galaxy (Wassermann, 1994)

The CPS Evaluation Sourcebook: Practical Resources for Evaluating Creative Problem Solving Outcomes (Trettinger, Sortore & Tallman, 1992)

BEST COPY AVAILABLE

Comprehension is the ability to explain, interpret and extrapolate ideas, concepts and information.

Examples:

- Explain how the battle was won.
- What was the main idea of the article?
- Tell how the model works.

Cue verbs to use in questioning: explain, summarize, interpret, estimate, paraphrase, conclude, prepare, demonstrate.

Application is the ability to apply understanding to new situations and solve problems.

Examples:

- Based on your knowledge of the contenders, predict who will win the election.
- Draw the school grounds to scale.
- Write journal entries in your log as if you were Columbus on his trip to the New World.

Cue verbs: apply experiment, organize, construct, solve, put together, model, select, put to use, interview.

Higher Levels

Analysis is the ability to break facts, ideas and concepts into parts, to examine relationships among parts, to compare and contrast, and to create categories.

Examples:

- Outline the chapter.
- Categorize your ideas for solving the problem.
- Compare life in British Columbia today with life a hundred years ago.

Cue verbs: outline, compare and contrast, divide, classify, categorize, analyze, inspect, simplify, survey.

Synthesis is to create a new whole, see a new pattern of relationships, develop a new and unusual approach.

Examples:

- Design a vehicle that does not use a fossil fuel.

Classroom Resources

Creative Problem Solving: An Introduction (Treffinger, Isaksen & Dorval, 1994)

The Real Problem Solving Handbook (Treffinger, 1994)

Reach Each You Teach II: A Handbook for Teachers (Treffinger, Hohn & Feldhusen, 1989)

Soar: A Program for the Gifted Using Bloom's Taxonomy (Reid & Reid, 1982)

The Creative Problem Solver's Guidebook: A Practical Set of Reproducible "Templates" to Guide Facilitators and Group Participants (Treffinger, Sortore & Tallman, 1992)

Creative Problem Solving for Teens (Elwell, 1993)

Practice Problems for Creative Problem Solving (Treffinger, 1994)

Inventing, Inventions, and Inventors: A Teaching Resource Book (Flack, 1989)

Lessons from the Hearthstone Traveler (Stanish, 1988)

Mindglow (Stanish, 1986)

Scamper (Eberle, 1977)

Scamper On (Eberle, 1987)

24

- Devise a plan for reducing the amount of garbage created by man.
- Develop the ideal regional plan for your community for the Year 2025.

Cue verbs: create, form, compose, design, produce, rearrange, predict, hypothesize, imagine, invent, develop.

Evaluation is to establish criteria and make judgements and decisions.

Examples:

- Explain which in your opinion is the best solution to the problem.
- Explain which is the better buy.
- Write a critique of the ruling.

Cue verbs: rank, judge, rate, evaluate, decide, critique, assess, grade, recommend, defend, conclude, determines.

Creative Thinking

Four behaviours associated with creative thinking are fluency, flexibility, originality and elaboration.

Fluency is the ability to generate many ideas. This skill is required for students to tell what they know; to think of ideas for writing, drawing or speaking; and to think of ways to solve a problem. Question stems to promote fluency include: "In what ways...," "List...," or "Brainstorm...." Examples are: In what ways might we solve the recess problem? List different forms of power. Brainstorm possible consequences of a global economy.

Flexibility requires generating a wide range of ideas. The question stem "How many different ways..." encourages student flexibility. For example, "How many different ways can you find to measure the length of a room?" or "List many different ways to produce a book report," are questions that encourage flexibility of student responses.

Originality refers to unique, unusual responses. Original responses usually occur at the end of an idea-finding activity, after the more obvious ideas have been produced. Question stems include: "What is the most unusual idea... way...?" and "What if...?" For example: "What is the most unusual way to market our product?" and "What if we had no air travel?"

Characteristics of creative people...

- Adventurous
- Willing to take risks
- Feel whole parade is out of step
- Always baffled by something
- Persistent
- Independence in judgment
- Unconcerned about power
- Questioning
- Becomes preoccupied with a problem
- Emotionally sensitive
- Never bored
- Sense of humour
- Not interested in small details
- Stubborn
- Speculative
- Strives for distant goals
- Thorough
- Receptive to ideas of others
- Self starters

BEST COPY AVAILABLE

25

If I were mayor...

When a flyer announcing the "If I Were Mayor" contest arrived, Grade 2 teacher Louise Baines saw it as an opportunity to use the idea as a problem solving exercise. She presented the following scenario (mess) to her students:

- You have just won the North Cowichan Mayoral election. You are filled with pride that the people of this community chose you to be their mayor. You have great plans to improve the city.

The class discussed the role of the mayor, what makes a good leader and what pressing problems face their town. Each student had a different set of ideas. The following are excerpts from Ian's written responses. Note that first he lists all of his ideas, then selects the most important idea(s), marks it with an asterisk and then moves the most important idea forward.

- Data Finding

Some things a mayor is concerned about...
Electricity, power lines, taxes, parks, population growth, Pollution"...

- Problem Finding

In what ways might I...
Lower the taxes, Stop cutting down

continued

Elaboration requires adding ideas, providing details, extending thinking. "What else...?" is a question stem leading to inquiries like "What else do you see?" followed by a probe, "Tell me more."

When students use creative thinking strategies to generate ideas, it is important to establish rules to keep the process moving and to create a safe environment. Some basic rules are:

- Generate as many ideas as possible.
- Work quickly.
- Add to other people's ideas.
- Defer judgment until all of the ideas have been given.

SCAMPER

Scamper is a strategy that can be used to break mind-set and enhance creative thinking (Eberle, 1987). Think about a topic of concern and ask, "To create a unique solution what might I...

Substitute? — person? place? thing?

Combine? — what? combine purposes? ideas?

Adapt? — reshape? tune-up? tone down?

Modify? — magnify? minimize?

Put to other uses? — new use?

Eliminate? — remove? omit? simplify?

Rearrange? — change order? plan? scheme?

Problem Solving

The Creative Problem Solving process is a flexible tool that can be used to examine real problems and issues. There are six stages to the model. Each stage requires a (D) divergent phase when many ideas are needed and a (C) convergent phase when decisions are made about the best ideas to move forward.

The process, initially developed by Parnes and Osborne, has been modified over the years so that it is more flexible. The following is from Treffinger, Isaksen and Dorval (1994, p. 19).

26

Understanding the Problem Component

- Mess Finding

  (D) Seeking opportunities for problem solving.

  (C) Establishing a broad, general goal for problem solving.

- Data Finding

  (D) Examining many details, looking at the Mess from many viewpoints.

  (C) Determining the most important data to guide problem development.

- Problem Finding

  (D) Considering many possible problem statements.

  (C) Constructing or selecting a specific problem statement (stating the challenge)

Generating Ideas Component

- Idea Finding

  (D) Producing many, varied and unusual ideas.

  (C) Identifying promising possibilities — alternatives or options having interesting potentials.

Planning for Action Component

- Solution Finding

  (D) Developing criteria for analyzing and refining promising possibilities.

  (C) Choosing criteria and applying them to select, strengthen and support promising solutions.

- Acceptance Finding

  (D) Considering possible sources of Assistance/Resistance and possible actions for implementation.

  (C) Formulating a specific Plan of Action.

All of the stages do not need to be used with each problem. For example, when students are studying an environmental issue like "our shrinking rainforests," gathering data and listing problems associated with the topic can be meaningful activities on their own. Later, students may choose one of the key problems to solve. While they may ultimately decide upon the best solu-

trees, Stop pollution, Stop littering, Protect fish, beaches, and sea and wildlife."

- Idea Finding.

Ian decided protecting the local habitat was the most important problem. His ideas included:
1. Instead of making the pollution go up into the air — make it go down into the centre of the earth.
2. Do your part.
3. Build a BIG wildlife preserve."

- Solution Finding

Ian decided one of the criteria necessary to assess his idea would be whether or not the issue is important to the citizens of his community.

He evaluated his solution by looking at its advantages, disadvantages and unique possibilities. Advantages included: animals can be seen, the Rod and Gun Club would help, and the Fish and Game Club would help. Limitations were: Loggers and the government might not agree. A unique potential was that he could fence the animals for people to see.

- Acceptance Finding

First item on Ian's plan of action was to contact a realtor and buy lots of land. In one month he planned to hire a surveyor to map out the property. In three months he would contact volunteers to start working.

BEST COPY AVAILABLE
27

tion, they may or may not develop and implement a plan of action.

Following through on a plan of action and presenting findings to real audiences can be a powerful lesson in social responsibility. In Duncan, for example, a group of teens concerned about youth violence created a series of skits to present to younger students. The dramatization provokes the audience to think about the choices they make that escalate or reduce violence.

To assist teachers in assessing student problem solving, Treffinger, Sortore and Tallman, (1992) have developed 12 tools for observing, assessing and evaluating student understanding and use of the Creative Problem Solving process.

Strategy to promote question asking

As educators we want our students to become self-directed learners, to ask questions and to be curious about the world around them. One way to achieve this is to promote their question asking abilities. Millar (1989) presents strategies to help students ask questions at all levels of thinking. In addition, he shows how students can be taught to generate criteria which they can then use to assess their own levels of questioning.

Levels of questioning include:

- gathering information: who, what, where, when, why, how?
- organizing information: why?
- extending information: what next, what if?

Supporting and encouraging gifted learners to ask "what next?" and "what if?" will help students learn to anticipate, to hypothesize and to go beyond the apparent in their thinking.

Teaching Students to Think

Opportunities for using higher order thinking skills can be made available to students in two ways. One is in the students' classroom assignments: written assignments, problem solving activities and project work. The other is the kinds of questions teachers ask during discussions.

When teachers rely on questions that require specific answers, students learn to respond in a convergent manner. They learn that it is their job to find the "right" answer. To create a classroom environment in which students feel safe enough to take

Classroom Resources

Developing Student Questioning Skills: A Handbook of Tips and Strategies for Teachers (Millar, 1989)

User's Guidebook: Measure of Questioning Skills (Himsl & Millar, 1985)

CORT Thinking: 1-6 (deBono, 1976)

Just Think (Tyler, 1982)

Stretch Think (Tyler, 1984)

Patterns for Thinking: Patterns for Transfer: A Cooperative Team Approach for Critical and Creative Thinking in the Classroom (Fogarty & Bellanca, 1989)

Thinking in the Classroom: Resources for Teachers, Volumes One and Two, (B.C. Ministry of Education, 1991)

Developing Independent Learners: The Role of the School Library Resource Centre (B.C. Ministry of Education, Learning Resources Branch, 1991)

risks and share ideas, teachers must be prepared to ask open-ended questions and to encourage a variety of thoughts and opinions as responses.

Learning to ask questions that promote exploration of ideas is a skill that takes time and perseverance to develop. *Serious Players in the Classroom* (Wassermann,1990), written for primary teachers, provides examples of teacher interactions that promote thinking. *Teaching Elementary Science: Who's Afraid of Spiders* (Wassermann & Ivany,1988) does the same for intermediate level teachers. Training in developing questioning skills is available through the Faculty of Education at Simon Fraser University. The Great Books Foundation also offers training in leading group discussions that promote thinking.

Educators agree that students need to think creatively and critically. There is disagreement, however, about whether the teaching of "thinking skills" should be done separately or only in the context of the curriculum's content.

DeBono has been one of the proponents of teaching thinking skills separately and then embedding them in the content. DeBono's CORT program for students at the intermediate or higher levels introduces 10 different thinking skills at each of five levels. Tyler's *Just Think* (1982) and *Stretch Think* (1984) materials introduce CORT thinking skills to primary students. Ultimately the goal is to use these skills to promote deeper exploration of content.

Developing Research Skills

To support independent investigations all students need to know where to go to obtain information, how to record ideas and how to organize and report the outcomes of their work. If they are working on real problems the information they need may not be found in books. Interviewing and developing surveys are two skills to consider.

Interviewing

Preparation for the interview:

- Decide on the purpose of the interview.
- Brainstorm possible questions.
- Select questions to provide the data needed for the project.

Research Skills

- Uses card catalogue.
- Understands library organizational system.
- Uses specialized reference materials such as:
  - anthologies
  - biographies
  - atlases
  - bibliographies
  - catalogues
  - dictionaries
  - directories
  - encyclopedias
  - indexes
  - periodicals
  - reader's guides
  - surveys
  - yearbooks
- Uses sources of information other than books:
  - audio tapes
  - charts
  - film strips
  - globes and maps
  - periodicals
  - pictures
  - radio and television
- Uses community resources:
  - businesses
  - colleges and universities
  - galleries and museums
  - government agencies
  - professional organizations
  - service clubs
  - science centres

BEST COPY AVAILABLE

29

- Develop an order for presenting the questions.
- Decide how to analyze the data.
- Brainstorm things to do in preparation for the interview.
- Select the important items and put them in a logical sequence.

Role play the interview

Interviewing is high risk for students. If they are well prepared and have had opportunities to rehearse the interview in advance and get feedback from their classmates, they will feel more secure. Working in teams for face to face interviews — with one person asking questions and another recording helps to relieve some of the pressure associated with this process.

Surveying

Surveying follows the same process as interviewing with these differences:

- Write the list of survey questions.
- Decide how to obtain responses. Yes or no responses? Multiple choice? Open ended?
- Select questions carefully.
- Field test the questions by trying them out on several volunteers.
- Rewrite questions until they are clear and provide data that can be sorted and analyzed.

Products

Student products refer to the things they develop to show their learning. Developing products from investigations provides students with an opportunity to use their learning style strengths and personal preferences to represent their knowledge.

Representing Knowledge

Examples of products that draw upon a variety of styles or intelligences are: models, diagrams, letters, videos, debates, displays, dramatizations, multimedia presentations, concept maps, stories, sculptures, paintings, songs, scripts, classification systems, advertisements and cookbooks.

Reaching the Audience

Students take more care in developing their products when they are intended for audiences beyond the classroom. Products for real audiences include:

- letters to the editor and articles in the local newspaper,
- student works published in children's literary magazines,
- displays in public places — malls, banks, shop windows, parks,
- presentations to appropriate local groups. For example: city council, historical society, naturalists society,
- artistic performances for the public or senior citizens,
- story telling in a library or bookstore,
- creation of oral history tapes for a library,
- invention convention for other students,
- mall display of outcomes from ecological studies,
- contribution of math puzzles to children's magazines,
- televised student panel discussion of a community problem,
- student business plans reviewed by business community, and
- dramatization of an issue for the community.

Points to consider...

- Before the work begins, engage students in developing criteria for assessing the development of the product and evaluating it upon completion.
- Include student learning logs as part of the assessment process.
- Use products in the development of student portfolios.

31

Learning Environment

The learning environment consists of the physical as well as social and emotional environment that the teacher and students create. The needs of gifted learners in terms of environment are not significantly different from those of other students.

Physical, Social, Emotional

The physical environment for all learners may include interest centres, a variety of working spaces, and a full range of learning materials. Interest centres that introduce students to new topics or challenges can be of particular benefit to gifted students.

A social and emotional environment that is accepting and provides a safe and supportive atmosphere is important for all students. An environment that promotes group planning and problem solving can help students move from a teacher-directed atmosphere to one in which students accept responsibility for their own learning.

A social and emotional environment that is accepting and provides a safe and supportive atmosphere is important for all students.

Sometimes highly gifted students feel different and isolated. Strategies to help overcome these feelings are the study of famous people, bibliotherapy and grouping for instruction.

Study of Famous People

Some gifted students go through periods of feeling isolated because they think differently from many of their classmates. A way to help them feel less isolated is to study the lives of other gifted people. They can learn about the personalities, backgrounds, motivations, difficulties, as well as successes of the famous people. Such a study can lead to understanding of self.

Gifted adults have three traits contributing to their giftedness: above average intellect, creativity and task commitment (Renzulli, 1986). Students can study the interaction of these traits and discover how they contributed to the success of high profile people. Studies of famous people can be planned so that creative and critical thinking skills are embedded in the activities.

Classroom Resources

The Changing Years: My Choices and Decisions (Sanders, 1987)

The Changing Years: My Journal of Personal Growth and *The Changing Years: My Journal of Relationships with Others* (Bisignano & McElmurry, 1987)

Activities for the Study of Gifted/Talented Persons (Juntune, 1984)

The Growing Person: How to Encourage Healthy Emotional Development in Children (Shallcross & Sisk, 1985)

32

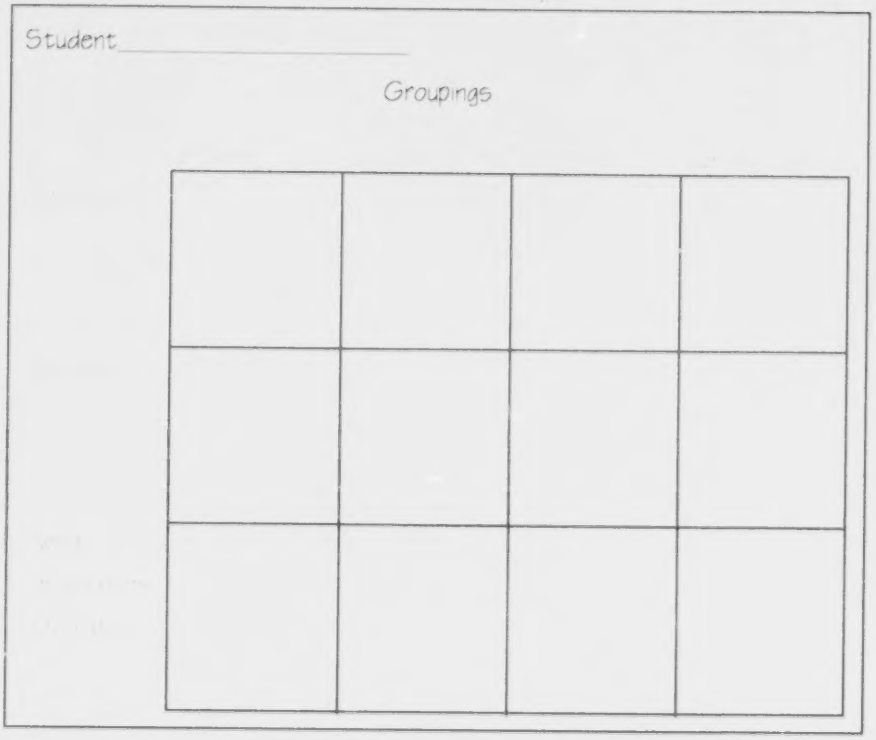
Bibliotherapy

Related to the study of famous people is the use of bibliotherapy (Silverman, 1993; Sisk, 1987). Students study the behaviour of characters in a story to explore how they think, feel and respond in a variety of situations. By asking students to place themselves in the positions of characters in the story, they can discuss motivations and outcomes, see different points of view and practice problem solving. Bibliotherapy is especially valuable for students who may be working through their own set of problems. Thinking about how others deal with a problem provides students opportunities to play with possible scenarios. This can extend their own repertoire of ways to work through problems.

Grouping for Instruction

Interacting with students like themselves is important to gifted learners. While acceleration may move students to higher levels, acceleration in itself does not guarantee that gifted learners will work with each other. Small group activities can be opportunities for gifted students to collaborate.

Groupings can be arranged in a variety of configurations to meet the unique learning needs of each student. Teachers may form groups to teach a skill, to work on specific curricular content, to provide students interested in a specific topic an opportunity to work together, or to create an environment in which students can interact with their intellectual peers. Groups should be flexible in composition and duration. Group membership may be determined by the teacher or by students.



BEST COPY AVAILABLE
33

You Can't Do It Alone

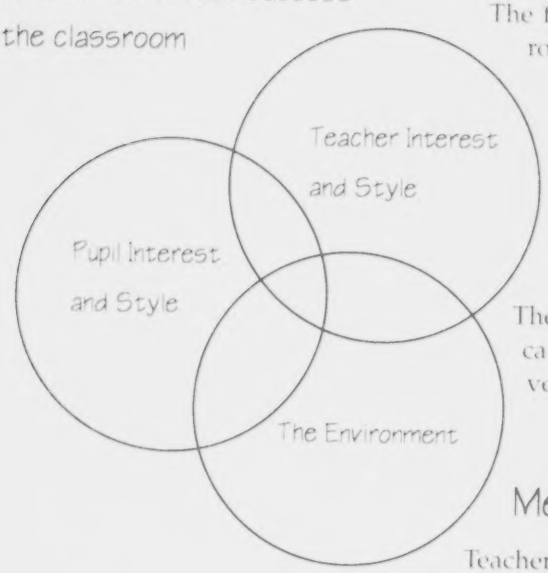
A classroom teacher can not meet all the learning needs of every pupil who comes through the door. Each professional has a unique set of teaching interests, styles and abilities. These characteristics make reaching some students easy, while meeting the needs of others remains a challenge. Seeking assistance from others is something all professionals find necessary from time to time.

The following are possible human resources for classroom teachers:

- school based teams,
- school district personnel,
- parents, and
- members of the community with an interest in children and youth.

The Teacher Planning Guide, found in an appendix, can help create a plan that will promote optimum development for each gifted child.

Factors that affect success in the classroom



Mentorship and Internships

Teachers, counsellors, librarians, other students, parents and community resource people can become mentors.

The relationship with a mentor can help the student move to a new level of understanding of a discipline. It is a unique opportunity for students to learn how experts in their field of interest go about their work. Internships can help the student experience the reality of work in a specific field.

Mentors can provide stimulation and support beyond the classroom to highly gifted students. They allow the student to move ahead in an area of passion while working with peers at other times.

Classroom Resources

Gender Equity: Mentoring for Students (B.C. Ministry of Education)

How to Mentor in the Midst of Change (Sullivan, 1992)

Mentor Relationships: How They Aid Creative Achievement, Endure, Change, and Die (Torrance, 1984)

Mentoring: An Annotated Bibliography (1982-1992) (Noller and Frey, 1994)

Developing a Mentor Program (Haeger & Feldhusen, 1989)

34

References

Armstrong, T. (1994). *Multiple intelligences in the classroom.* Alexandria, VA: Association for Supervision and Curriculum Development.

Benbow, C.P. (1986). SYMP's model for teaching mathematically precocious students. In J.S. Renzulli (Ed.), *Systems and models for developing programs for the gifted and talented* (pp.1-25). Mansfield Center, CT: Creative Learning Press, Inc.

Benbow, C.P., & Stanley, J.C. (Eds.). (1983). *Academic precocity.* Baltimore, MD: The Johns Hopkins University Press.

Betts, G.T. (1985). *Autonomous Learner Model: For the gifted and talented.* Greeley, CO: Autonomous Learning Publications and Specialists.

Bisignano, J., & McElmurry, M.A. (1987). *The changing years: My journal of personal growth.* Carthage, IL: Good Apple, Inc.

Bisignano, J., & McElmurry, M.A. (1987). *The changing years: My relationships with others.* Carthage, IL: Good Apple, Inc.

Bloom, B.S. (Ed.). (1956). *Taxonomy of educational objectives. Handbook: Book 1: Cognitive domain.* New York: Longmans Inc.

British Columbia Ministry of Education, Learning Resources Branch. (1991). *Developing independent learners: The role of the school library resource centre.* Victoria, BC: Ministry of Education.

British Columbia Ministry of Education. (1991). *Thinking in the classroom: Vol. 1. The context for thoughtful learning.* Victoria, BC : Ministry of Education.

British Columbia Ministry of Education. (1991). *Thinking in the classroom: Vol. 2. Experiences that enhance thoughtful learning.* Victoria, BC: Ministry of Education

British Columbia Ministry of Education. (no date). *Gender equity: Mentoring for students.* Victoria, BC: Ministry of Education.

Clifford, P., & Friesen, S.L. (1994). [Results of broad-based theme teaching]. Unpublished raw data.

Clifford, P., & Friesen, S.L. (1993). Teaching and practice: A curious plan: Managing on the twelfth. *Harvard Educational Review,* 63(3), 339-357.

Crabbe, A.B. (1986). *Creating more creative people*. Laurinburg, NC: The Future Problem Solving Program, St. Andrews College.

deBono, E. (1976). *CORT Thinking: 1-6*. Willowdale, ON: Pergamon Press Inc.

Drake, S.M. (1993). *Planning integrated curriculum: The call to adventure*. Alexandria, VA: Association for Supervision and Curriculum Development.

Eberle, B.F. (1977). *Scamper*. Buffalo, NY: D.O.K. Publishers, Inc.

Eberle, B.F. (1987). *Scamper on: Games for imagination development*. East Aurora, NY: D.O.K. Publishers.

Einstein, A., & Infeld, L. (1938). *The evolution of physics*. New York: Simon and Schuster.

Elwell, P.A. (1993). *CPS for teens: Classroom activities for teaching Creative Problem Solving* (D.J. Treffinger, Ed.). Waco, TX: Prufrock Press.

Feldhusen, H.J. (1990). *Individualized teaching of gifted children in regular classrooms*. East Aurora, NY: DOK Publications.

Feldhusen, J.F. (1992). *Talent identification and development in education (TIDE)*. Sarasota, FL: Center for Creative Learning.

Flack, J.D. (1989). *Inventing, inventions, and inventors: A teaching resource book*. Englewood, CO: Teacher Ideas Press.

Fogarty, R., & Bellanca, J. (1989). *Patterns for thinking: Patterns for transfer: A cooperative team approach for critical and creative thinking in the classroom*. Palatine, IL: IRI Publishing Group, Inc.

Gamberg, R., Kwak, W., Hutchings, M., & Altheim, J. (1988). *Learning and loving it: Theme studies in the classroom*. Portsmouth, NH: Heinemann Educational Books, Inc.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books, Inc., Publishers.

Gibbons, M. (1991). *How to become an expert: Discover, research and build a project in your chosen field*. (rev. ed.). Tuscon, AZ: Zepher Press.

Gibbons, M. (1991). *Pathways: A personal project management system*. (rev. ed.). Bowen Island, BC: Personal Power Press International Inc.

Haeger, W.W., & Feldhusen, J.F. (1989). *Developing a mentor program*. East Aurora, NY: D.O.K. Publishers.

Himsl, R., & Millar, G. (1985). *User's guidebook: Measure of questioning skills*. AB: Planning Services, Alberta Education.

Jacobs, H.H. (Ed.). (1989). *Interdisciplinary curriculum: Design and implementation*. Alexandria, VA: Association for Supervision and Curriculum Development.

Juntune, J. (1984). *Activities for the study of gifted/talented persons*. Circle Pines, MN: 120 Creative Corner.

Kanevsky, L., Maker, C.J., Nielsen, A., & Rogers, K.B. (1994). Brilliant behaviours. In C.J. Maker & A. Nielsen, *Principles and curriculum development for the gifted*. Austin, TX: Pro-Ed.

Kaplan, S.N. (1986). The grid: A model to construct differentiated curriculum for the gifted. In J.S. Renzulli (Ed.). *Systems and models for developing programs for the gifted and talented* (pp. 180-193). Mansfield Center, CT: Creative Learning Press, Inc.

Kulik, J.A. (1992). *An analysis of the research on ability grouping: Historical and contemporary perspectives*. Storrs, CT: The National Research Center on the Gifted and Talented.

Kulik, J.A., & Kulik, C.L. (1992). Meta-analytic findings on grouping programs. *Gifted Child Quarterly*, 36(2), 77-33.

Lazear, D. (1991). *Seven ways of knowing: Teaching for multiple intelligences* (2nd ed.). Palatine, IL: Skylight Publishing.

Lazear, D. (1991). *Seven ways of teaching: The artistry of teaching with multiple intelligences*. Palatine, IL: Skylight Publishing.

McGreevy, A. (1982). *My book of things and stuff: An interest questionnaire for young children*. Mansfield Center, CT: Creative Learning Press, Inc.

Millar, G.W. (1989). *Developing student questioning skills: A handbook of tips and strategies for teachers*. Athens, GA: Torrance Centre for Creative Studies.

Noller, R.B., & Frey, B.R. (1994). *Mentoring: An annotated bibliography (1982-1992)*. Sarasota, FL: Center for Creative Learning, Inc.

Norman, P. (1989). *The self-directed learning contract: A guide for learners and teachers*. (3rd ed.). Burnaby, BC: Simon Fraser University, Faculty of Education.

Reid, C., & Reid, J.D. (1982). *Soar: A program for the gifted using Bloom's taxonomy.* Austin TX: Pro-Ed.

Reis, S.M., Burns, D.E., & Renzulli, J.S. (1992). *Curriculum compacting: The complete guide to modifying the regular curriculum for high ability students.* Mansfield Center, CT: Creative Learning Press, Inc.

Renzulli, J.S. (1977). *The Interest/A/Lyzer.* Mansfield, CT: Creative Learning Press, Inc.

Renzulli, J.S. (1986). The three ring conception of giftedness: A developmental model for creative productivity. In J.S. Renzulli & S.M. Reis (Eds.),*The triad reader* (pp. 2-19). Mansfield Center, CT: Creative Learning Press, Inc.

Renzulli, J.S., & Smith, L.H. (1978). *Learning styles inventory: A measure of student preference for instructional techniques.* Mansfield Center, CT: Creative Learning Press, Inc.

Renzulli, J.S., & Reis, S.M. (1985). *The schoolwide enrichment model: A comprehensive plan for educational excellence.* Mansfield Center, CT: Creative Learning Press, Inc.

Rogers, K.B. (1994, October). *What research says about ability grouping and giftedness.* Paper presented at the conference of the Association of the Educators for the Gifted, Talented, and Creative Children of B.C.

Sanders, C. (1987). *The changing years: My choices and decisions.* Cathage, Il: Good Apple, Inc.

Shallcross, D.J., & Sisk, D.A. (1985). *The growing person: How to encourage healthy emotional development in children.* Buffalo, NY: Bearly Limited.

Silver, H.F., & Hanson, J.R. (1980). *Learning styles and strategies: Who am I as a: Learner, teacher; What are my: Assets, liabilities; How can I work more effectively with: Students, teachers, parents, administrators.* Moorestown, NJ: Hanson Silver & Associates, Inc.

Silverman, L.K. (Ed.). (1993). *Counseling the gifted and talented.* Denver, CO: Love PUblishing Company.

Silverman, L.K. (1994, October). *Locating highly gifted children.* Paper presented at the Colloquium on Highly Gifted Students, Vancouver, BC.

Sisk, D. (1987). *Creative teaching of the gifted.* New York: McGraw-Hill Book Company.

Smith, E.R. (1991). *Gate: Curriculum framework 1991-1996*. San Diego, CA: San Diego City Schools.

Stanish, B. (1986). *Mindglow*. Carthage, IL: Good Apple, Inc.

Stanish, B. (1988). *Lessons from the hearthstone traveler: An instructional guide to the creative thinking processes*. Carthage, IL: Good Apple, Inc.

Starko, A.J. (1986). *It's about time: Inservice strategies for curriculum compacting*. Mansfield Center, CT: Creative Learning Press, Inc.

Sullivan, C.G. (1992). *How to mentor in the midst of change*. Alexandria, VA: Association for Supervision and Curriculum Development.

Torrance, E.P. (1984). *Mentor relationships: How they aid creative achievement, endure, change, and die*. Buffalo, NY: Bearly Limited.

Treffinger, D.J. (1986). *Blending gifted education with the total school program*. (2nd ed.). East Aurora, NY: D.O.K. Publishers.

Treffinger, D.J. (1994). *The real problem solving handbook*. Sarasota, FL: Center for Creative Learning, Inc.

Treffinger, D.J. (1994) *Practice problems for Creative Problem Solving*. Sarasota, FL: Centre for Creative Learning, Inc.

Treffinger, D.J., Hohn, R.L., & Feldhusen, J.F. (1989). *Reach each you teach II: A handbook for teachers*. (2nd ed., rev.). East Aurora, NY: D.O.K. Publishers.

Treffinger, D.J., Isaksen, S.G., & Dorval, K.B. (1994). *Creative problem solving: An introduction*. (rev. ed.). Sarasota, FL: Center for Creative Learning, Inc.

Treffinger, D.J., & McEwen, P. (1989). *Fostering independent creative learning: Applying creative problem solving to independent learning*. East Aurora, NY: D.O.K. Publishers.

Treffinger, D.J., Sortore, M.R., & Tallman, M.C. (1992). *The CPS evaluation sourcebook: Practical resources for evaluating Creative Problem Solving outcomes*. Sarasota, FL: Center for Creative Learning, Inc.

Treffinger, D.J., Sortore, M.R., & Tallman, M.C. (1992). *The creative problem solver's guidebook: A practical set of reproducible "templates" to guide facilitators and group participants*. Sarasota, FL: Center for Creative Learning, Inc.

Tyler, S.B. (1984). *Just think.* Manhattan Beach, CA: Thomas Geale Publications, Inc.

Tyler, S.B. (1984). *Stretch think.* Manhattan Beach, CA: Thomas Geale Publications, Inc.

Wassermann, S. (1990). *Serious players in the primary classroom: Empowering children through active learning experiences.* New York: Teachers College Press.

Wassermann, S. (1993). *Getting down to cases: Learning to teach with case studies.* New York: Teachers College Press.

Wassermann, S. (1994). *Introduction to case method teaching: A guide to the galaxy.* New York: Teachers College Press.

Wassermann, S., & Ivany, J.W. (1988). *Teaching elementary science: Who's afraid of spiders?* New York: Harper & Row.

Winebrenner, S. (1992). *Teaching gifted kids in the regular classroom. Minneapolis,* MN: Free Spirit.

Programs

Future Problem Solving Program, 315 W. Huron St., Suite 140-B, Ann Arbor, MI 48103-4203

Junior Great Books, The Great Books Foundation, 35 East Wacker Dr., Suite 2300, Chicago, IL 60601-2298

Odyssey of the Mind, OM Association, Inc., P.O. Box 547, Glassboro, NJ 08028

Appendices

Appendix 1: Programming Options

The educational needs of gifted and talented students will vary both in the intensity of the needs and the kinds of programs that will support development. The needs of most students can be met through enrichment programs, grouping practices and challenging activities. There are, however, some students who will need a more radical program of intervention. The more a student's performance deviates from the norm, the more extreme the intervention. Treffinger and Sortore (1992 pp. 59-62) provide the following illustrative levels of programming which move from services that benefit all students to services that may be required by only a few students.

LEVEL 1: Services for ALL students

- Creative and critical thinking
- Higher levels of Bloom's Taxonomy
- Independent projects
- Accommodation of student learning styles
- Exploratory activities -- speakers and field trips
- Individualized progress in basic skill areas
- Exposure to new topics -- foreign languages and fine arts programs
- Activities based on students interests

LEVEL 2: Services for MANY students

- Great Books
- Odyssey of the Mind
- Future Problem Solving
- Young authors conference
- Readers' theatre
- Young Inventors
- Computer lab
- Science fairs
- Math competitions
- Performing and visual arts
- Clubs and academic interest groups
- Curriculum compacting
- After school and/or summer enrichment courses

LEVEL 3: Services for SOME students

- In-depth follow-up with guest speakers
- Individual music, drama or art lessons
- Cluster groupings to provide advanced instruction in content areas
- Community Problem Solving
- Opportunities to assist local businesses
- Individual or small group research projects on advanced themes or topics
- Participation in special classes in content or process areas
- Peer teaching opportunities
- Instruction by tutors/older students
- Participation in special programs sponsored by colleges and universities

LEVEL 4: Services for A FEW students

- Dual or part-time participation in higher level courses
- Grade level acceleration or multiple grade advancement
- Extended work with mentors
- Presentation of student work/projects to outside audiences or community groups
- Publication of student products in school or community sources -- or in regular adult outlets

Appendix 2: Teacher Planning Guide

In what ways might I facilitate the development of programming that will meet this students unique learning needs?

Will the student's placement provide thinking and learning challenges? Is the level of accomplishment such that the student needs another setting some of the time? ...all of the time?

Consider:

- **Content**
  - Accelerate to a higher level for appropriate subjects
  - Telescope by covering content in less time. For example, two years of math in one year.
- **Environment**

  Alternate forms of grouping:
  - in class,
  - within the school,
  - pull out programs, and
  - in the community.
- **Program**

  Alternate forms of programming:
  - honours programs
  - advanced placement
  - correspondence courses
  - distance learning
  - mentor — student, teacher, other
  - early entrance — to school, to university

Does the classroom program include the teaching of skills or knowledge that the student already knows or can learn faster than other students?

Consider:

- **Content**
  - Compacting to free student to extend learning in other areas

Are there opportunities for the student to work with content that deals with complex issues/ abstractions?

Consider:

- **Content**

  Organized through the use of:
  - broad based themes that promote interdisciplinary connections.
  - realistic or real problems — local, provincial, national, global.
  - cases built around realistic scenarios

BEST COPY AVAILABLE

Are there opportunities for the student to work with processes that require higher order thinking?

Consider:

- **Processes that involve the student in:**
  - critical thinking
  - creative thinking
  - problem solving
  - affective thinking
  - discussions that promote exploration of meaning
- **Programs**
  - Great Books
  - Future Problem Solving
  - Odyssey of the Mind
- **Research activities using:**
  - Primary sources of information — interviews, surveys
  - Secondary sources of information — books, videos

Are there opportunities for the student to communicate results of studies in many different ways?

Consider:

- **Products that allow pupil choice**
  - Multimedia presentations
  - Displays
  - Dramatizations

Are there opportunities for the student to communicate results of studies to real audiences?

Consider:

- **Products produced for real audiences:**
  - works published in children's literary magazines
  - displays in public places — malls, banks, shop windows,
  - creation of oral history tapes for library

Are there opportunities for the student to be actively involved in the planning and assessment of learning outcomes?

Consider:

- **Involving the student in developing:**
  - independent studies/investigations
  - negotiation of a learning contract
  - means to assess process, e.g., journal, learning log
  - criteria for assessing the study's outcomes
- **Working with the student to determine:**
  - positives of the project
  - thing to improve another time

BEST COPY AVAILABLE

Appendix 5: Class Assessment

Characteristics	Student Name
Above Average Intelligence	
Advanced vocabulary	
Good memory	
Learns quickly and easily	
Large fund of information	
Generalizes skilfully	
Comprehends new ideas readily	
Makes abstractions easily	
Perceives similarities, differences, relationships	
Makes judgments and decisions	
Creativity	
Questions. Curious about many topics	
Has many ideas	
Sees things in varied ways	
Offers unique or unusual ideas	
Adds details; elaborates	
Transforms or combines ideas	
Sees implications or consequences easily	
Risk-taker; speculates	
Feels free to disagree	
Finds subtle humor, paradox or discrepancies	
Task Commitment	
Sets own goals, standards	
Intense involvement in preferred problems and tasks	
Enthusiastic about interests and activities	
Needs little external motivation	
Prefers to concentrate on own interests / projects	
High level of energy	
Perseveres	
Completes, share products	
Eager for new projects / challenges	
Assumes responsibility	

BEST COPY AVAILABLE

Appendix 4: Brilliant Behaviours

Student _____ Date _____

Strength _____

True?	Behaviour
	Humor - Exceptionally keen sense of the comical, the bizarre, absurd.
	Motivation - Intense desire to know, do, feel, create or understand.
	Interests - Ardent, sometimes unusual, passionate, sometimes fleeting.
	Communication/Expressiveness - Extraordinary ability to convey meaning or emotion through words, actions, symbols, sounds or media.
	Inquiry - Probing exploration, observation or experimentation with events, objects, ideas, feelings, sounds, symbols or media.
	Problem-solving - Outstanding ability to bring order to chaos through the invention and monitoring of paths to a goal; enjoyment of challenge.
	Sensitivity - Unusually open, perceptive, or responsive to experiences, feelings and to others.
	Intuition - Sudden recognition of connections or deeper meanings without conscious awareness of reasoning or thought.
	Reasoning - Outstanding ability to think things through and consider implications or alternatives; rich, highly conscious, goal-oriented thought.
	Imagination/Creativity - Extraordinary capacity for ingenious, flexible use of ideas, processes or materials.
	Memory/Knowledge/Understanding - Unusual capacity to acquire, integrate, retain and retrieve information or skills.
	Learning - Ability to acquire sophisticated understanding with amazing speed and apparent ease.

Appendix 3: IEP - Student Plan

Name Mark Bamford Teacher Jane Davidson

Date Nov. 8 1994 Grade/Class 6 School Cedar Elementary

Based on the student profile, check the planning options below that will be part of the students individual education plan.

Appropriate Learning Levels

- ☑ Acceleration (reading material)
- ☐ Telescoping
- ☐ Compacting

Curriculum Differentiation

- ☑ Content extension of Soc. Studies topic
- ☑ Processes thinking - analysis, synthesis evaluation
- ☑ Products Communicate findings to an audience in a variety of ways

Enrichment Opportunities

- ☐ Exploration activities
- ☑ Thinking, research and planning skills
- ☐ Individual study option

Other

- ☑ Special Programs take part in debating club with Mr. Smyth
- ☐ Mentoring
- ☐ Apprenticeship

recommend Mark work as a resource person for primary science study of reptiles and amphibians

What are the intended student outcomes?

explore a topic in depth
develop skills of elaboration
define his project
gather data
synthesize information

How will the outcomes be assessed?

student self assessment < quality of work, rigour, challenge, new knowledge

daily learning log – to include what he has done, insights, questions, concerns
presentation and final product

Criteria for evaluation of outcomes (set with student).

to include following areas:

1. Planning
2. Data gathering / research skills
3. Organization
4. Presentation
5. Final product

Members of Planning Team: classroom teacher, gifted resource teacher, student

Review Date February 1995

Appendix 3: IEP - Student Profile

Name Mark Bamford Teacher Jane Davidson

Date October 1994 Grade/Class 6 School Cedar Elementary

Learning styles/strengths:

prefers to work alone
likes individual projects
Voracious reader
good memory for facts

Student Interests:

reading - any topic
math
Social studies - study of different people

Special Abilities:

Verbal - speaking
large fund of information

Concerns: difficulty getting ideas on paper
handwriting

Results from Achievement Tests

Name of Test	Date Given	Result
Canadian Achievement	June '94	9.5
* breakdown of results attached		

Results from Formal Testing

Name of Test	Date Given	Result
WISC III	94/09/22	95%ile
verbal		99%ile
performance		58%ile

Teacher Observations:

can read and understand anything he picks up
has many ideas
responds quickly to logic problems

Summary of Needs:

opportunities to make use of his verbal and reasoning skills
Support in recording ideas and knowing how to communicate ideas in writing
support in organizing his ideas, research findings

Student's vision, goals for self:

become a programmer for computer games

BEST COPY AVAILABLE

*Append samples of student work

Appendix 3: IEP - Student Plan

Name _____ Teacher _____

Date _____ Grade/Class _____ School _____

Based on the student profile, check the planning options below that will be part of the students individual education plan.

Appropriate Learning Levels

- ⌟ Acceleration
- ⌟ Telescoping
- ⌟ Compacting

Curriculum Differentiation

- ⌟ Content
- ⌟ Processes
- ⌟ Products

Enrichment Opportunities

- ⌟ Exploration activities
- ⌟ Thinking, research and planning skills
- ⌟ Individual study option

Other

- ⌟ Special Programs
- ⌟ Mentoring
- ⌟ Apprenticeship

What are the intended student outcomes?

How will the outcomes be assessed?

Criteria for evaluation of outcomes (set with student).

Members of Planning Team:

Review Date _____

Appendix 3: IEP - Student Profile

Name _____ Teacher _____

Date _____ Grade/Class _____ School _____

Learning styles/strengths:

Results from Achievement Tests

Name of Test	Date Given	Result

Student Interests:

Results from Formal Testing

Name of Test	Date Given	Result

Special Abilities:

Teacher Observations:

Summary of Needs:

Student's vision, goals for self:

*Append samples of student work

Additional Readings

Benbow, C.P. (Ed.). (1992). Challenging the gifted: Grouping and acceleration (Special Issue). *Gifted Child Quarterly, 36*(2).

Bireley, M., & Genschaft, J. (Eds.). (1991). *Understanding the gifted adolescent: Educational developmental, and multicultural issues.* New York: Teachers College.

Buescher, T.M. (Ed.). (1987). *Understanding gifted and talented adolescents: A resource guide for counselors, educators, and parents.* Evanston, IL: Center for Talent Development, Northwestern University.

Caine, R.N., & Caine, G. (1991). *Making connections: Teaching and the human brain.* Alexandria, VA: Association for Supervision and Curriculum Development.

Canfield, J., & Wells, H.C. (1976). *100 Ways to enhance self-concept in the classroom: A handbook for teachers and parents.* Englewood Cliffs, NJ: Prentice-Hall, Inc.

Clark, B. (1986). *Optimizing learning.* Columbus, OH: Merrill.

Clark, B. (1992). *Growing up gifted.* (4th ed.). Scarborough, ON: Prentice Hall Canada.

Colangelo, N., & Davis, G.A. (Eds.). (1991). *Handbook of gifted education.* Boston: Allyn and Bacon.

Davis, G.A., & Rimm, S.B. (1994). *Education of the gifted and talented.* (3rd ed.). Boston: Allyn and Bacon.

Delisle, J.R. (1992). *Guiding the social and emotional development of gifted youth: A practical guide for educators and counselors.* New York: Longman.

Delisle, J., & Galbraith, J. (1987). *The gifted kids survival guide II.* Minneapolis, MN: Free Spirit.

Feldhusen, J.F., & Kolloff, P.B. (1986). The Purdue three-stage enrichment model for gifted education at the elementary level. In J.S. Renzulli (Ed.), *Systems and models for developing programs for the gifted and talented.* Mansfield Center, CT: Creative Learning Press, Inc.

Galbraith, J. (1983). *The gifted kids survival guide: (For ages 11-18).* Minneapolis, MN: Free Spirit.

Galbraith, J. (1984). *The gifted kids survival guide: (For ages 10 and under).* Minneapolis, MN: Free Spirit.

Gallagher, J.J. (1985). *Teaching the gifted child.* Newton, MA: Allyn and Bacon, Inc.

Gross, M.U. (1992). The use of radical acceleration in cases of extreme intellectual precocity. *Gifted Child Quarterly*, 36(2), 91-99.

Himsl, R., & Millar, G. (1985). *User's guidebook: Measure of questioning skills*. AB: Planning Services, Alberta Education.

Jacobs, H.H., & Borland, J.H. (1986). The interdisciplinary concept model: Theory and practice. *Gifted Child Quarterly*, 30(4), 159-163.

Keating, D.P. (1991). Curriculum options for the developmentally advanced: A developmental alternative to gifted education. *Exceptionality Education Canada*, 1(1), 53-83.

Kerr, B.A. (1985). *Smart girls, gifted women*. Columbus, OH: Ohio Psychology.

Kerr, B.A. (1991). *A handbook for counseling the gifted and talented*. Alexandria, VA: American Association for Counseling and Development.

Kulik, J.A., & Kulik, C.C. (1984). Effects of accelerated instruction on students. *Review of Educational Research*, 54, 409-425.

Maker, C.J. (1982). *Curriculum development for the gifted*. Rockville, MD: Aspen Publishers, Inc.

Milgram, R.M. (Ed.). (1991). *Counseling gifted and talented children: A guide for teachers, counselors and parents*. Norwood, NJ: Ablex.

Ministry of Education. (1994). *The kindergarten to grade 12 education plan*. Province of B.C.: Ministry of Education.

Perry, S.M. (1984). *Giftedness: Living with it and liking it* (2nd ed.). Greeley, CO: Autonomous Learner Publications.

Renzulli, J.S., Smith, L.H., White, A.J., Callahan, C.M., & Hartman, R.K. (1976). *Scales for rating the behavioral characteristics of superior students*. Mansfield Center, CT: Creative Learning Press.

Rimm, S.B. (1986). *Underachievement syndrome: Causes and cures* (6th ed.). Watertown, WI: Apple Publishing Company.

Rogers, K.B. (1991). *The relationship of grouping practices to the education of the gifted and talented learner*. Storrs, CT: The National Research Center on the Gifted and Talented.

Shore, B., Cornell, D., Robinson, A., & Ward, V.S. (1991). *Recommended practices in gifted education: A critical analysis*. New York: Teachers College Press.

Siegle, D. (Ed.) *What educators need to know about ability grouping: Practitioners' guide - A9201*. Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.

Silverman, L.K. (1989). The highly gifted. In J. Feldhusen, J. VanTassel-Baska, & K. Seeley, *Excellence in educating the gifted*. Denver, CO: Love Publishing Company.

Silverman, L.K. (Ed.). (1993). *Counseling the gifted and talented*. Denver, CO: Love Publishing Company.

Smith, E.R. (1991). *Gate: Curriculum framework 1991-1996*. San Diego, CA: San Diego City Schools.

Sourcebook for the academically able adolescent. Baltimore, MD: The Johns Hopkins University Center for Talented Youth (CTY).

Sourcebook for parents of intellectually gifted preschool/elementary school children. Baltimore, MD: The Johns Hopkins University Center for Talented Youth (CTY).

VanTassel-Baska, J. (1989). Appropriate curriculum for gifted learners. *Educational Leadership* 46(6), 13-15.

VanTassel-Baska, J. (Ed.). (1990). *A practical guide to counseling the gifted in a school setting* (2nd ed.). Reston, VA: Council for Exception Children.

VanTassel-Baska, J. (1992). Educational decision making on acceleration and grouping. *Gifted Child Quarterly*, 36(2), 68-72.

VanTassel-Baska, J. (1994). *Comprehensive curriculum for gifted learners*. (2nd ed.). Toronto: Allyn and Bacon.

Whitmore, J.R. (1980). *Giftedness, conflict and underachievement*. Boston, MA: Allyn & Bacon.

Glossary of Terms

Ability grouping: A variety of organizational structures of either long or short term duration, whereby students of like ability or achievement level can work together. (Rogers, 1994)

Ability-grouped Classes (Tracking): Students at one grade level are assigned to a self-contained class based on ability or achievement. A subset of this strategy would be special full-time classes for gifted students or magnet schools. (Rogers, 1994)

Above level achievement tests: Tests that have a ceiling considerately higher than the grade level in which a student is placed. For example, a test where a student in Grade 3 could demonstrate a reading and comprehension level at Grade 12+.

Acceleration, college: Access to college-level course work at earlier age than expected.

Acceleration, grade: Completion of general grade-level curriculum at earlier age than expected.

Acceleration, subject-based: Rapid movement through the curriculum of a single subject area.

Categories of giftedness based on I.Q (Silverman, 1994)

115-129 IQ	Mildly gifted	(+1-2 SD)
130-144 IQ	Moderately gifted	(+2-3 SD)
145-159 IQ	Highly gifted	(+3-4 SD)
160+ IQ	Extraordinarily gifted	(<+4 SD)

Cluster Grouping: Gifted students (usually five to eight students) are placed in one classroom with the remainder of the class composed of a normal distribution of ability levels. The "cluster" teacher is given appropriate training and spends proportionate time on curriculum differentiation and direct instruction for this cluster group. (Rogers, 1994)

Content: The ideas, concepts, descriptive information and facts presented to the student.

Creatively gifted: The creatively gifted have creative thinking abilities which are superior to other children in the school system. These children are divergent in nature and might not score as high as the intellectually gifted on tests of achievement and intelligence, but will score higher on measurements of creativity than the general population. (Betts, 1985)

Cross-Graded Classes: Students are re-grouped by their achievement or performance level in one or two subject areas across grade lines. A subset of this strategy would be full-time cross-grading for all subject areas, as may occur in multi-age classrooms, non-graded classes, etc. (Rogers, 1994)

Genius: Is giftedness which produces new conceptual frameworks that lead to paradigmatic shifts in a discipline, art form, profession, or field of business-economics. (Feldhusen, 1992)

Giftedness: A complex of intelligence(s), aptitudes, talents, skills, expertise, motivation and creativity that lead the individual to productive performance in areas or domains or disciplines valued by the culture and time. (Feldhusen, 1992)

Intellectually gifted: The intellectually gifted have intellectual abilities superior to other children in the school systems. Scores for these children will be high when looking at achievement and intelligence. (Betts, 1985)

Learning Environment: The physical setting and psychological climate in which learning takes place.

Process: The way new material is presented, the activities in which students engage, the questions that are asked, teaching methods and the thinking processes developed in the students.

Product: The thing students develop to synthesize and communicate knowledge, concerns, findings, points of view, recommendations, and theories. It is the result of student interaction with content resembling, for gifted students, those developed by professionals in the discipline being studied.

Pullout: Gifted students at the same or different grade levels are removed from their regular classroom for a set time each week for enrichment and extension of regular classroom curriculum. Hours range from one to six per week. (Rogers, 1994)

Real audience: An audience that has a connection to the students' work in a real life sense. For example, a city council might have an interest in the results of a student study and recommendations on violence; members of the community might be an audience for student developed artistic performances; readers of the local paper might read a students' letter to the editor addressing a community problem.

Talented: The talented have developed one specific area in which they excel. The ability is more focused on one area, such as math or music, but they possess a very strong drive or motivation to devour everything about that one area. Participation in the area is consistently outstanding and there is the need for further facilitation and enrichment. (Betts, 1985)

Within-Class Ability Grouping: Students within one classroom are divided into two or more groups by achievement level in a subject or topic area. This is also known as "flexible grouping." (Rogers, 1994)

Professional Organizations and Resources

The Association for the Gifted (TAG)
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091
(800) 336-3278
(Professional membership encourages program development and professional training in the education of the gifted; journal)

The Association of the Educators for the Gifted, Talented, and Creative Children of B.C.
British Columbia Teachers Federation
550 W. 6th Ave.
Vancouver, BC V5Z 4P2
(Provincial Specialist Association)

The Center for Academically Talented Youth (CTY)
Johns Hopkins University
Charles and 34th Streets
Baltimore, MD 21218
(301) 338-8427
(Offers summer programs, networking, and talent search program.)

Council for Exceptional Children/ERIC Products
ERIC Clearinghouse on Disabilities and Gifted Education
1920 Association Drive
Dept. K31148
Reston, VA 22091-1589
(More than 30 digests and research briefs that provide a synthesis of latest research findings.)

Gifted Children's Association of B.C.
Cathy Martyn
5293 Somerset Drive
Nanaimo, BC V9T 2K5
Phone or Fax (604) 758-8238
(An advocacy organization with parent and educator membership; publication.)

Hollingworth Center for Highly Gifted Children
P.O. Box 464
South Casco, ME 04077
(Provides information and newsletter on highly gifted children.)

National Association for Gifted Children (NAGC)
1155 15th Street, NW, Suite 1002
Washington, DC 20005
(202) 785-4268
(Membership includes journal, *Gifted Child Quarterly*, networking, resource information.)

National Council of Teachers of Mathematics
1906 Association Drive
Reston, VA 22091

The National Research Center on the Gifted and Talented
The University of Connecticut
362 Fairfield Road, U-7
Storrs, CT 06269-2007
(Research center in gifted education.)

National/State Leadership Training Institute on the Gifted and the Talented (N/SLTI-G/T)
Hilton Center
900 Wilshire Boulevard, Suite 1142
Los Angeles, CA 90017
213/489-7470
(Provides short-term training of parents, educators, and administrators of the gifted; publications.)

The World Council for Gifted and Talented Children, Inc.
Dr. Norah Maier
University of Toronto, Faculty of Education
371 Bloor Street West
Toronto, ON
Canada M5S 2R7
(Promotes research for and about giftedness and creativity around the world; semi-annual journal.)

How to Improve This Resource Guide

We hope this Resource Guide addresses most of your questions and concerns regarding providing appropriate programs for gifted learners. Since the users of any manual are often the ones best able to identify its strengths and weaknesses, let us know how this document, and others like it, can be improved. When the manual fails to solve a problem, or if you have any suggestions and comments, please complete a copy of this page and send it to the Branch.

How do you rate *Gifted Education, A Resource Guide for Teachers*?

	Yes	No	If No, please explain:
1. Useful?	☐	☐	_____
			_____
2. Easy to understand?	☐	☐	_____
			_____
3. Well organized?	☐	☐	_____
			_____
4. Complete?	☐	☐	_____
			_____

Other Comments: _____

_____

_____

_____

_____

_____

Return to: Coordinator, Gifted Education
Special Education Branch
Ministry of Education
Parliament Buildings
Victoria, B.C.
V8V 1X4

BEST COPY AVAILABLE

Queen's Printer for British Columbia ©
Victoria, 1995

Province of British Columbia
Ministry of Education

ED 00239